[KS: A list of photographs and sketches will be found in Category 116. The ones reproduced for the files are starred.]

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Menstruating women on Ifaluk, as in many cultures, were subject to a variety of taboos. There were four special houses on the atoll which served as menstrual huts for each of the four villages into which the households were grouped. A woman, at the onset of menstruation, retired to one of these, removed from the ordinary life of the community until her period was over.

The census-taking was not a rapid process. It took interminable palavering among Tom, the chiefs and the members of each household to get a list of names, with clan affiliations, marital status, and such-like lore dear to the anthropological heart. When the list was complete, Don supervised the weighing and taking of heights—the only physical measurements practical with the available equipment. The weights were taken on a set of ordinary bathroom scales that had been picked up in Guam. The measuring pole was less prosaic—made from a pole found in the Fan Nap and calibrated to the nearest quarter inch by marking with a ball-point pen. Maroligar officiated at the weighing and measuring; after he had watched the first two or three operations, he explained to each person where to put his feet on the scales, tried to persuade him to stand up straight for the measuring, and coaxed the shier women and children into cooperating.

In the meantime I would prowl around with the big Crown Graphic camera, snapping whatever caught my interest, and popping flash-bulbs to the delight of the children who had a new toy in the used bulbs.

There was plenty of time to look around while Ted was trying to get all of the names and relationships straight. We noticed that the houses were well built, with big posts stuck in the ground to which stringers and rafters were firmly lashed with stout coconut-fiber rope; the roofs were coconut thatch, and the walls were mats woven of coconut leaves. The houses were low, and people did not stand in them, but sat or sprawled on the floor, which was very clean and covered with plaited coconut mats. There were no windows as such, but each house had four to six doors, which could be closed with more coconut mats when desired. The interiors were dim—but there was no need for good reading light. There was little or no clutter on the floor, except for a few things propped against the walls. Most of the family posses-

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CHAPTER III

MAPPING THE BOONDOCKS

THE IDEA was to study the human ecology of Ifaluk: the interrelations of man, his culture, and the environment. For man and his culture there was the reservoir of information accumulated by Burrows and Spiro during their 1948 residence on the island: studies which Ted planned to continue during his second visit. Don and I, with the enthusiasm of amateurs, wanted to help in this anthropological work. But there was also the environment to be studied—the land, the reef, the lagoon, the sea, the plants and animals. This "simple" situation—260 people living on half of a square mile of coral rock and sand—was incredibly complex.

When we had finished the counting, weighing and measuring of *Homo sapiens*, the next step seemed to be a start with the environment. The logical first move here was a map, a topographic survey of the situation.

The map problem was greatly simplified by the fact that a little previously a Navy reconnaissance plane had made a series of vertical and oblique aerial photographs of the whole atoll. The Ifalukians were fascinated by these photographs. They seemed to have no trouble at all in grasping the significance of either the vertical or oblique shots, and most people easily recognized the major landmarks, even locating their particular family dwellings. They knew the atoll thoroughly, and the aerial photographs gave them a chance to stand off and look at the whole thing at once, for the first time.

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126 Don and I spent one morning drawing a base map for the island of Falarik from a mosaic of the vertical air photographs. With this outline, the next problem was to fill in details of trails, households and vegetation. We thought we would start by mapping the principal trails.

Both of us were rank amateurs at sketch mapping. We had a Brompton compass lent by Ted Arnow and a triangular ruler marked with conventional scales, but no measuring tape more than six feet long and no plane table.

We first tried improvising a tape by tying knots at two-yard intervals in 100 yards of cod-line. When we had finished this tedious job, we discovered the darn thing stretched and tangled too easily to be of any use. I then dedicated myself to trying to learn to pace accurately, and soon managed a pace that fitted nicely when used on the base map with the 1:2500 scale of the triangular rule. This "Bates pace" was a purely arbitrary unit, but it worked well enough for our purpose. I learned to make nice adjustments in scrambling over coral [131] boulders and around breadfruit trees and through fern thickets so that I could come out with the proper count. In crossing the island, plotting the course on the outline map made from the air photos, we generally found an error of five or ten feet (it was about 900 feet across Falarik). This would probably have been disgraceful for an engineer but it pleased us immensely.

First we tried noting compass directions and number of paces for the quirks in the paths with the idea of plotting these on the map later. But this didn't work—too many mistakes. So I tried making a plane table by sinking a German camera adapter-screw into a board so that it could be fastened to an American camera tripod. The resulting contraption could not be called sturdy, but I was very proud of the improvisation.

We quickly worked out an effective system for dealing with trails. The mapping team consisted of Don, Bakal, Tony and me. Don handled the plane table, equipped with the triangular rule, the compass and a towel for switching away flies. Bakal toted things. Tony scouted ahead on the winding trails. I would keep an eye on Tony and when he seemed about to disappear on a trail, would call out to him to wait

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and then pace directly toward him. Don would sight on Tony (or me on arrival) to get the direction, and I would call back the paces so that Don could draw directly on the base map.

The main trail of Falarik, which I got in the habit of calling "the broad highway," or sometimes "el camino real," ran through the coconut grove parallel to the lagoon shore, generally twenty or thirty yards in from the water. It was about two yards wide, and neatly marked on each side by a row of moss-covered coral rocks. This broad highway ran between the Fan Nap and the lagoon, and passed directly in front of five of the big canoe houses that faced the lagoon along the Falarik shore. The sixth canoe house on Falarik was away from the trail on the point of land that jutted toward Falalap. There were also two canoe houses on Falalap, one facing the lagoon, and the other facing the pass between the two islands.

The canoe houses, clearly distinguishable on the aerial photographs, were convenient reference points in mapping. They served not only for the storage of canoes, nets, lines and other gear, but also as social centers for the men of the atoll. Groups gathered there to talk, or rest, or weave nets, or carry on the never-ending job of making twine or rope from sennit, coconut fiber. A big sea-going canoe was being built in the Falepenach canoe house, near the Fan Nap, during the summer of 1953. This provided me with a convenient and continuing subject for photography.

The broad highway ran for almost a mile along the lagoon shore of Falarik, extending considerably beyond the last habitation, toward the north end of the island, ending abruptly in the middle of nowhere. This northern tip of the island, beyond the end of the trail, was a wild tangle of vegetation, relatively little visited and little used. Except for this northwest tip, the whole of the lagoon margin of the island was a park-like coconut grove, kept clear of weeds or shrubs with almost no other kind of tree—only an occasional breadfruit tree near the household areas, and a few other things like the big *Barringtonia* by the Sabolap canoe house.

The entire course of the broad highway was thus through the open coconut grove. The habitations were mostly set at some distance back from the highway, near the "boondock line."

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We picked up that word "boondock" in Guam, and very useful it proved to be. It became an important part of the Abbott-Bates vocabulary, and may well have also infected the Ifalukian speech. In Guam, it was used to refer to the wild tangle of miscellaneous vegetation that had taken over so much of the island after the disruption of the war.

The boondocks on Ifaluk were the parts of the atoll that were not clearly something else—that is, not coconut grove, not taro swamp, not household area. The boondocks were not exactly wild, because all sorts of useful things grew there, including planted coconuts and breadfruit trees. They were not exactly cultivated either. Such areas could thus hardly be called "jungle" or "scrub"; and "forest" seemed rather inappropriate. "Boondock" was just the word; though we could perhaps better have used the Ifalukian equivalent, niwel.

The boundary between the coconut grove and the boondocks was sharply defined: weeds and shrubs were kept cleared out of the coconuts only up to this definite line—the boondock line. This again roughly paralleled the lagoon shore, fifty or sixty yards in. We plotted it on our map, later, when the trail mapping seemed fairly well in hand.

The habitations, deep in the coconut grove and near the boondock line, were grouped into "households." The census showed that there were twenty-six such households on the atoll, eleven on the island of Falalap, and fifteen on Falarik. The Falarik households were not scattered evenly along the highway and lagoon, but formed two clusters or villages, one called Rauau, at the south end of the island—the Fan Nap was in the middle of this—and the other called "Falarik" (the address would probably be "Falarik, Falarik") with a gap of about a quarter of a mile along the broad highway between the two.

The whole system of land ownership of the island was built around these households, each of which had a name. Later in the summer we tried to map the holdings of one household, Falepenach. These holdings included not only the immediate vicinity of the living quarters, but also several patches of boondock and coconut grove on Falarik, and patches in the big taro swamp on Falalap. The patch arrangement seemed to provide that each household would "own" its share of each of the different kinds of land.

The households varied greatly in size, from one which included

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until it is able to walk, but the adopting mother shares the care and affections from the beginning; and when the baby is able to walk, it moves officially into the household of the adopting parents.

The child thus really acquires an extra set of parents, since it continues all through life to have close association with its real parents as well as with its adopting parents. The child acquires extra sets of "brothers" and "sisters" as well. Don found some difficulty with the word "brother" in teaching English since, while the Ifalukians all knew who were blood brothers and who were not, the matter seemed of little importance to them.

Our friend Yani, for instance, and his wife, Letaweriur, had three children. His oldest had been adopted into his mother's household, Soumat, and his next into his father's household (since his father was a re-married widower with no children by the second wife). Only the youngest had he kept to himself. Yet Yani was with all of his children every day. In this case, Yani and his wife, although they officially belonged in her household, Falepenach, spent most of their time in the Soumat household, since it was less crowded. This sort of casualness gave us a great deal of trouble with that census.

But this is straying from the problem of trying to get the Falarik trails down on the base map. With the broad highway and the canoe houses as fixed points of reference, we started to map the principal trails across the island. Falarik was a crescent, following the curve of the circular atoll reef; it was a little over a mile long, with an average width of about 300 yards. There were a dozen or so trails across the island from the inhabited, lagoon side, to the outer, ocean side.

The first of these, taking off from the canoe house beside the Fan Nap, began as a "highway" rather than a "trail." Like the broad highway, it was a wide, straight path, marked on both sides by lines of moss-covered coral rocks. On the left side of this trail was the dense vegetation of Katelu, the sacred site of the ancient Men's House which was in use in the time of Maur, the island's "culture hero." This sacred spot was never entered by anyone except Maroligar, who was its official custodian. As a result, it was a wild tangle of natural vegetation. At one point on the path by Katelu was a large, fresh-water pool in which Fagolier, the paramount chief, sometimes bathed. On the right

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side of the trail there was an open grove of high breadfruit trees and other plantings of the Falivelu household.

This trail by Katelu we called the "schoolhouse trail"—because it led directly to the schoolhouse. The schoolhouse was a thatched shed built in a large clearing exactly half way across the island. It had been put up in accordance with instructions, either from the Navy or the Trust Territory, and contained a blackboard and a supply of essential equipment like boxing gloves and basket balls. But how would one go about introducing schooling on Ifaluk? Or should one? The answer to this latter, surely, is "yes" because willy-nilly the Ifalukians must learn to deal with the outer world in these days when that world has become a small neighborhood, and even Ifaluk cannot be protected by its remoteness. But the question of how to introduce this schooling is a complex one for which perhaps no one has a clear answer.

At any rate, the schoolhouse was not used for educational purposes during the period of our stay, but it did have uses. The clearing was a handy place to locate the rain gauge, and the schoolhouse itself, with its open sides, seemed a good place for the regular measurements of shade temperature and humidity. So the area became our meteorological station.

On this south end of Falarik the coconut grove of the lagoon shore extended right around the tip of the island to the ocean side, enveloping the schoolhouse yard. The trail was straight and formal, however, only as far as the school; beyond it became a winding footpath leading through the coconuts to the ocean beach.

Except for this southern end and the long stretch of lagoon shore, Falarik was covered with boondocks. Coconuts grew all through these boondocks, and the principal forest tree was breadfruit. But there were a dozen other kinds of trees, and a thick underbrush of bushes and ferns—ferns everywhere. There were many swampy areas in the center of the island, but the land became slightly higher toward the ocean shore, the surface rough with coral boulders, culminating in a definite "boulder ridge" paralleling the ocean beach.

The beach on the ocean side was narrow, sloping rather steeply from this boulder ridge. Along most of the length of the island the beach, too, was covered with coral rocks, but there were also stretches of coral

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only source of supply, since no trade ship had visited the island for some months.

The captain went ashore on the final trip of the ship's launch. Most of the local population was assembled on the temple grass by the Fan Nap, all decked out with garlands in the hair and wreaths over the shoulders. I introduced the captain to Fagolier. It was a pleasure to watch the chief on such an occasion. He didn't need clothing for dignity: composed and calm, he always seemed pleased to meet the visitors, murmuring the correct phrases in Ifalukian, with no hint of the naked savage meeting civilization. Rather, the overdressed foreigners seemed awkward and out of place.

The captain photographed everyone, called in the sailors who had been wandering around, and took off. We all went down to the beach to see them go, but unhaunted by any desire to be going along. Don, of course, was terribly pleased to get his missing equipment: and I should have been pleased too, since I came to depend on that equipment for the rest of the summer.

That evening there was dancing. Ted thought at first that it was the children, but it turned out to be the young men, lined up by a bonfire, practicing for some big event that they planned presently. I popped flashbulbs at the dancers and Don and Ted watched, while the mosquitoes drained their blood away—another flaw in paradise. The scene was wild and lovely, the dark backdrop of the coconut palms fitfully lit up by the fire, the row of naked bodies trimmed with flowers and anklets and bracelets of coconut leaves, the inflected chanting, the stomping, clapping and rhythmic movement. Don learned pretty well to get the nice resonance that they produced by clapping the cupped right hand against the inside of the bent left arm.

Don got sore at me for popping flashbulbs—he said it spoiled the atmosphere, was an insult to the Ifalukians, and so forth. I suppose I felt sheepish about intruding with a camera myself—but I had thought I was doing my duty in getting a photographic record. Anyway, I took off with my camera in a huff and kept a residuum of photographic inhibition all of the rest of the summer. The camera is a curious thing that way—it takes gall or cheek or impertinence to get good pictures

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and the photographer is apt to be much resented. Yet people like to see the pictures. I never could see that the Ifalukians minded my photographic habits. They tended at first to stop work and pose when they saw me with the camera, but they quickly got the idea that I wanted them to continue working without paying any attention to me. The kids were particularly cooperative since (it was Ted's idea) I always had a pocket full of hard candies for distribution.

The people from Satawal left the next morning, Monday. I forgot to mention that when we arrived on Ifaluk, we found we had been preceded, a few days earlier, by a set of visitors from Satawal, another atoll about 150 miles to the east: three of the big ocean-going canoes, carrying thirty-seven men and boys, two women, two young girls and two babies. They were making a round of visits to the islands of the area in the traditional style, and during their stay on Ifaluk they were guests of the community.

Here in the Western Carolines the knowledge and practice of navigation with ocean-going canoes persists, while it is only a dim memory in most parts of the Pacific. Here too it will surely and perhaps promptly disappear, since it is, by any reckoning, a hazardous affair. The palus, the captain-navigators, of Ifaluk were all old men, and few of the young men seemed to be learning the art. The young men that we questioned had all travelled rather widely among neighboring atolls—but mostly in trade ships, or in the course of being moved about for labor by the Japanese during the war. Yani, for instance, who had travelled a great deal in ships, going to Yap to work on the airstrip, and to Palau for the start of his teacher education, had made only two canoe trips—both to nearby atolls—and he had no interest in further canoe travel.

The navigating methods of the Polynesians and Micronesians are not too well understood, and no European has ever accompanied them on an ocean voyage—or at least no European has ever written an account of such a voyage. Ted, in consequence, wanted very much to go with the Satawal flotilla which was heading next for Elato, some fifty miles to the east. Ted pointed out that while the trip might be hazardous, it was surely no more hazardous than driving on a parkway in the United States on Sunday, which millions of people did with no

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island with two pairs of blue jeans and some T-shirts by way of clothes, and first off had cut the legs of both pairs of blue jeans to convert them into shorts. The trouble was that my legs kept getting scratched in the course of pacing through the underbrush. Then the cuts would get nasty infections. I was ready to abandon my principles and take to long trousers, at least for work in the boondocks.

These infections were another of the flaws in paradise. Staphylococcus would start growing happily in every little skin abrasion, turning it into a nasty sore. The infections yielded fairly readily to antibiotic ointments, but this involved daily sessions of "wound-licking" and an ever-present decoration of band-aids over the scratched skin surfaces. This bothered me particularly because it was a contradiction of my pet theories about the intrinsic healthfulness of the tropical climate.

The whole question of "tropical sores" is a puzzling one. Coral cuts are notoriously troublesome, but on Ifaluk it seemed to make no difference whether the cut was made by coral or by the saw-like margins of the pandanus leaves. It might have been special susceptibility by newcomers to local bacterial strains—but the local people often had similar sores. It might have been some nutritional lack—I had seen similar infections in South America clear up quickly with thiamine injections. Certainly, we, with our canned food, were not living on any ideal diet.

Whatever the cause, the sores were a continuing nuisance, and I was very glad to get Don's extra trousers, much as I hated the idea of trousers—an arctic garment not really adapted to a tropical climate.

While Don was stowing his newly arrived gear, I concentrated on trying to set up a drying cabinet for plant specimens, taking one of the big wooden cases and fixing it so that pressed plants could be stored inside over continuously burning kerosene lanterns, to provide a constant, gentle heat. We would need a record of the plants growing on the island, both wild and cultivated, and there was no use starting plant collections without provisions for drying them.

This drying cabinet was put up in the "laboratory tent," a tarp that was suspended between two coconut palms beside the Fan Nap. A big mosquito net was hung under the tarp and a box to serve as table put inside. We frequently worked there during the day, to get away from

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the flies, and during the evening, to get away from the mosquitoes. Ted stuck to the Fan Nap for writing up his notes—but carefully protected with long trousers tied around the ankles, and with coils of Japanese "punk" burning to exorcise the mosquitoes. He had great faith in that burning punk.

We decided to start the plant collecting that afternoon, since the drying cabinet was ready. It was quite an expedition—Yani, Tony, Bakal, Don and me. The idea was to try to collect not only the plants, but information about them. Tony, as a Ulithi man, didn't know the local plant lore, but he was a good interpreter. Yani's English was rapidly gaining in fluency, however, and he and Don, particularly, were able to understand one another almost from the beginning without outside help. Yani did know the local plants—their names and their uses—and Don would jot down this information while I fussed with the plant press itself. Bakal, as usual, was general handy man.

The clean-up was continued next morning and pretty well finished by noon, when everyone on Falarik gathered on the lawn outside the Fan Nap for a communal meal. "Feast" is probably too strong a word for the meals that invariably followed any community activity. The food was lavish enough, contributed by all of the participating households, but it did not differ markedly from the everyday diet.

In this instance, Ted decided that the occasion was important enough for him to contribute one of the cases of corned beef that he had brought along for just such purposes. The canned beef was a greatly appreciated delicacy, called "carawao," which would seem to stem from the Spanish word for water-buffalo, carabao. Several Ifalukian words reflected Spain's dominance in the Carolines in the 19th century —the word "cat" for instance, which hardly differed from the Spanish gato.

The opened case of beef was put before Maroligar, the number two chief, but the distribution of the cans was carried out by Toroman, the number three chief, who always seemed to take over when there was anything to be divided among the island households. He called out the names of the households, tossing the cans to representatives of each; some cans were set aside for Falalap (which was having its own clean-up), and there was a small, separate pile for the chiefs.

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262 264 527 The people had brought many pots of breadfruit, cooked in different ways, and there was a large pile of drinking coconuts—also divided by Toroman. The meal lasted about an hour. I spent most of the time prowling around with the cameras while Ted and Don were more directly participating, squatting with the chiefly group. Ted reported that he liked best breadfruit that had been cooked with coconut [252] cream, resulting in a sort of mashed dough with the white, creamy, semi-sweet sauce.

123 648 That evening Don had his regular session of English and Ifaluk language exchange under the gasoline lanterns in the back of the Fan Nap. After the lesson Yani and his friend Tachiwelimeng lingered. They asked about the war between the United States and Japan, and got to telling about their own experiences. Tachiwelimeng had been taken by the Japanese to Fais, where there was a radio station. When the first American ship appeared off the island the Japanese got very excited, radioed the news to Yap, and then disappeared into hiding. The bombardment that followed scared everybody on the island. Tachiwelimeng spoke no English, but he was a born clown and gave a hilariously vivid pantomime of how the noise of the first shell tumbled him, how he crept behind a coconut palm and crouched in a ball, how a shell hit the coconut tree about six feet overhead and blew it down. No one was hurt except one of the Japanese, who was hit in the arm, but not seriously.

648 Japanese ships later took their captive labor to Yap, to use in filling holes in the landing strip made by the regular American bombings. Tachiwelimeng gave another graphic pantomime of American planes dodging Japanese ack-ack, bombs exploding all over the place and the like. These people seemed to look back on this as a big sideshow, bearing no resentment for the local people killed by the American bombings of Yap, and little resentment against the Japanese for getting them involved there.

126 The days were beginning to go by with remarkable speed. Ted gravely crossed them off, one by one, on a big calendar posted in the Fan Nap, and there was a check on this in my notebook, where the meteorological observations were entered every morning, first thing

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after breakfast. All sorts of things went into that notebook (one of those waterproof engineer's books, carried in a case on the belt) and I had a chance to exercise my file-clerk instincts in keeping them straight. Numbers for plant notes had a square pencilled around them, so they caught the eye quickly. Pack and film numbers for photographs taken with the Crown Graphic had a circle around them; numbers for the Leica were double underlined; numbers for the Kodak Reflex were distinguished with a triangle.

The only marks for Thursday, July 9th, the day following the clean-up, were triangles, because the only notes were on photographs taken with the reflex. This was because the day was spent on a fishing expedition and I carried only the reflex. I never had liked that camera much, so I carried it whenever I thought there was danger of damage or loss—in this case, danger of salt-water damage.

Most of the men of Falarik were involved in this fishing expedition. Preparations started early in the morning. Great lengths of rope were hauled out of the canoe houses and wound spirally with strips of palm leaves, one after another, until the effect was that of a huge pile of monstrous green tinsel. The lengths of rope, as soon as they were prepared, were carried down to the lagoon shore and piled into the canoes.

By about ten o'clock everything was ready and the flotilla of canoes pushed off—a couple of dozen of them, the small one-man kind, and the medium-sized kind that carried four or five men. None of the big sea-voyaging canoes were launched. We went, with Bakal and Yani, in Bronson's rowboat, the BWUP, named for the ungainly trigger-fish. We felt awkward and sedate in this tub, but we were afraid of being a nuisance if we asked to go in one of the canoes. Anyway, Yani and Bakal were enamored of the BWUP, and it did make a steady base for observation and photography.

There was a row of about a mile across the still, bright lagoon. We took turns at rowing as a matter of principle, of sharing activities. But I am no athlete under any circumstances, and I was perhaps too obviously glad when I could stop the rowing and stretch out on the prow of the boat with head overside, staring into the mysterious sapphire

ABOVE There was little clutter on the floor of the houses: most family possessions were slung from the rafters.

BELOW The people of Ifaluk cooperated nicely in the census operation.

[p. 64 (A)]

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ABOVE The boondocks were not exactly wild; they were not exactly cultivated either.

BELOW We tried to collect botanical specimens of all of the kinds of plants on the atoll.

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516
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[P. 64 (D)]

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corpse is wrapped in seemingly endless coils of rope, weighted with stones, and taken out to sea for burial. The canoe used for this then cannot be touched for four days, four being in general the magic number on Ifaluk.

The alus, the spirits of the dead, are sometimes benevolent and sometimes malevolent, apparently depending on the character of the person from whom they came. The malevolent spirits cause all sorts of trouble, including most kinds of illness. Mel Spiro, in his psychological studies of the Ifalukians, found fear of alus to be dominating both consciously and subconsciously. We had no encounters with alus, but we didn't seek any, and the attitude toward alus of the young men who worked with us seemed to be largely ritual, but we did not try to probe into their psychology.

In theory the dances, then, were designed to please the alus, both the high gods and the ordinary spirits. The elaborate ur dances which required these endless nightly rehearsals, were surely for the high gods; but all of the alus, like all of the people, must have enjoyed them. The rehearsals finally ended in the big show, which was held on July 22nd, at midday in the schoolhouse clearing.

Don and I were off taking advantage of a low tide to work on profiles of the reef when a messenger came to tell us the dance was about to start. When we got there the men had already formed into a line along the north margin of the clearing. They were all dressed up, with bows of the ivory-like unfolded coconut leaves on arms and legs, with coconut-leaf skirts over loin-cloths, with necklaces of flowers and of the greenish-ivory coconut leaves, with garlands of flowers, and surmounting all, a block of pith over the forehead, wrapped in red paper and tinfoil (from cigarette packages) and bearing a cluster of tall white feathers (perhaps from the fairy terns; but more probably and prosaically from chickens). Faces were marked with red turmeric, a streak of red along the jawline, and dabs on the cheeks and arms.

They put on a fine show. Some of the pieces were songs or chants, with an accompaniment of stamping and clapping. Others involved more complicated gesturings and posturings. In one, two men standing with outstretched arms pantomimed man-of-war birds—tilting, soaring and gliding—while the rest knelt facing each other, chanting the

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796 [126] story. This went on for nearly an hour, with the three of us too busy with cameras and recording machine to really appreciate what was going on. Then there was an intermission. Arueligar, the high priest, distributed the two cases of corned beef and the two cartons of cigarettes we had donated for the occasion. Dancers and onlookers refreshed themselves by drinking coconuts. Then the dance was resumed, this time by the women, who formed their line along the west margin of the clearing. Their dress was similar to that of the men, except that of course they wore lava-lavas, not loin-cloths, under their coconut-leaf skirts.

796 178 533 Ted was interested to discover that two of the dances performed by the women were new—a concrete demonstration that the traditional form of the ur dance does not necessarily impose traditional subjects. One of the new dances, turning on a poem composed by Letaweriur, Yani's wife, concerned the first coming of the Americans to the island. It was a very long chant, recounting in detail the appearance of the first ship, the delivery of an official document, the nature of America and the Americans, and the like. Ted's translation of the opening stanza is:

[539]

Now all our women rejoice;
Now the Americans have come.
This is pleasing to the chiefs.
They have given us a paper.
This place is to rise;
This island is to be lifted up.
The chiefs say we are to dance.
We will dance, we will rejoice!
This very month, for this is a good year! Eii
The Japanese are gone.
We did not like their rough ways.
The gods have been good to us;
Now our crops are safe.
The Americans talk kindly. . . .

527 123 262 When the women's dance was over, the people scattered into small groups—made up by family, by household, or by friendship—for the feast. Perhaps "feast" is too strong a word, since there was nothing

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000 [126] We had aqualung equipment, but this was for Bob Rofen to use in his fish collecting in the fall. We didn't touch it because the supply of compressed air was very limited, and anyway we were unfamiliar with the equipment. We felt no need for deep diving, though. There was plenty to observe close to the surface, and we had "schnorkel" breathing tubes, which were useful if you wanted to keep your eye on the fish.

133 If we were going to be scientific and systematic about our daily swim, the first thing to do, we decided, would be to make a map of the swimming area, so we could tell where we were. The coral in the lagoon grew in large, irregular clumps which I called "coral heads" though they are more properly called "reef knolls" or "patch reefs." These were separated by open areas in which the bottom was clean, white sand.

The coral heads near the shore grew to a height where they were just awash at low tides. The tops of these were flat, and the coral was dead except around the margins. In deeper water, the "heads" were rounded and they occurred scattered everywhere over the lagoon floor as far out as we could see, peering into the crystal water.

The coral formations in shoal water showed up plainly on our aerial photographs as irregular dark patches, and from these I tried sketching the formations directly in front of the Fan Nap, where our fish-watching activities were concentrated. We subsequently checked and modified the map on the spot with the row boat, and in the end got a pretty accurate picture of this bit of the lagoon.

Landscape (or seascape) features, to be remembered, need names, so we decided we should name the reef formations in the swimming area. First to be commemorated were our wives. Two prominent and complicated contiguous masses of coral, fairly near shore, were named Izzie (for Isabela) and Nancy by Abbott and Bates respectively. Various tributary fragments broken off from these masses were given names after Abbott and Bates children. Ted selected a pleasant, rather isolated and well-rounded head to name after Marie, with Nani, his daughter, somewhat farther out in the same line, and his son David off to the right.

A central group of reefs was named after the five chiefs of Ifaluk. A large and rather sterile mass near shore presented a problem in

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The water was full of marvels. Don had a category of what he called "unlikely animals"—animals he never would have thought of if he had been in charge of animal design. Any one of the three of us, cruising around with our goggles, would be likely to shout to the others to come see some new marvel he had just discovered for the first time.

I remember the afternoon Ted called out "come look at this—here is a helicopter fish!"

Sure enough there was a sort of squat fish hovering in mid-water near Marie (Ted was apt to do his fish watching near the coral head named after his wife) with fins split into long narrow rays which, in their movement, had reminded Ted of a helicopter. The fish seemed completely indifferent to our watching; presently it went into forward gear and moved slowly and sedately off.

We looked through the fish books and presently made out that it was *Pterois*, a "scorpion fish" or "lion fish." We learned that the protruding spines were poisonous, which probably accounted for its calm indifference. We subsequently saw these fish several times in our swimming area, but they were not among the regular, territorial inhabitants.

The synaptid sea-cucumber was another unlikely animal. Most sea-cucumbers have a reasonably cucumber-like form (though one kind on Ifaluk achieved an almost watermelon-like size). The synaptids, however, are long, slender, snake-like affairs. The species in our swimming area had a bright, almost black-and-white checkered pattern that reminded me of some of the South American vipers like the fer-de-lance. Stretched out from under a coral head, the sea-cucumber looked for all of the world like a fer-de-lance crawling out from under a rock. Only, when you looked closely, you saw not the menacing, triangular head of the viper, but instead, where the head should be, a rather silly-looking tuft of waving plumes. And when you picked this unlikely animal up, you found, not firm flesh, but a limp, tissue-paper-like affair. I always thought of them as the tissue paper fer-de-lances of the coral heads.

Don thought that the giant clams should be included among the unlikely animals, but he was looking at them as a zoologist, thinking of their unlikely physiology and structure. The giant clams (*Tridacna*)

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136 the summer. Just about the time that we had decided that this octopus had a permanent home there, it disappeared and our daily checks would reveal only the empty hole. Then Don found another small octopus living in a hole in the center of the coral we named after Maroligar.

The octopuses were suspicious creatures, and while they would often be partially outside when first found, they would slowly withdraw into the recesses of their holes under the steady gaze of the observer. There was always a pile of small coral fragments outside the hole, and as an octopus retreated, these fragments were pulled in by the sucker-covered arms to block the entrance—except that generally a small peep-hole was left, framing a watchful octopus eye.

The area around the hole on Maroligar reef was littered with debris from the meals of the octopus: empty shells, claws and legs from the crabs it had eaten. Don picked up all of these and saved them—a food record on the octopus. Every day he would find the remains of more crabs, so that he got a record of the diet of this crab-loving octopus over a period of several weeks.

Then, one day, the hole on Maroligar was empty, and it remained empty for quite a while. Thus we got the impression that these octopuses would make headquarters in one place for days, or weeks, but that they did not stay permanently in any one place, did not establish "territories" the way so many of the other lagoon inhabitants did.

I only once saw an octopus swimming in the daytime. I wouldn't have seen this if it hadn't moved—a piece of a brown coral mass I was looking at suddenly gave a few convulsive movements and then shot off, jet fashion, with trailing tentacles, to the next coral head where it stopped, again blending perfectly into the background. I swam slowly toward the place where it had disappeared, but just as I got near enough so that I could distinguish octopus from coral, it took off again, this time disappearing into the depths of the lagoon.

133 I have been writing glibly about "coral" and "coral heads." Actually,
● 126 these patch reefs were built up of a wide variety of lime-secreting organisms, many of them not true corals. We picked one of the patch reefs, Maroligar, and tried to make a map of the different kinds of organisms that were contributing to its structure. We thought this

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would be simple and easy, since Maroligar was a small patch reef about six yards long and a couple of yards wide. It turned out, however, to be a complicated operation, which kept Don and me busy for many hours.

Much of the trouble was technical—mostly the problem of working in the water with dry materials. When we had got an outline map made, we decided to spot the different kinds of coral and coral-like organisms on our map with colored pencils. But the colors, when wet, would blur! We had a canvas-covered inner-tube that served as a raft. We would tow mapping gear and towels on this, out to position. Then I would stand up, on some convenient part of Maroligar, dry my hands, and start trying to mark down the corals as Don, diving around with goggles, called them to me. He would come periodically to peer at my map, point with dripping finger to where I had the thing wrong, and with this well-placed drip of water that bit of my map would really be spoiled. Or I would try to move, and slip, splashing water over everything. At times we got completely fed up with the project, but we kept on and finally got a reasonable map that, with all of the different colors, was almost as pretty as Marpligar itself.